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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,479	10/21/2005	Bo Bernhardsson	P16718US2	3945
27045	7590	09/25/2008	EXAMINER	
ERICSSON INC. 6300 LEGACY DRIVE M/S EVR 1-C-11 PLANO, TX 75024			TRAN, KHAI	
			ART UNIT	PAPER NUMBER
			2611	
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			09/25/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/535,479	<b>Applicant(s)</b> BERNHARDSSON ET AL.	
	<b>Examiner</b> KHAI TRAN	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,9,11,12,19 and 22-27 is/are rejected.
- 7) ☒ Claim(s) 3-8,10,13-18,20 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/17/2005, 9/26/2005</u> .                                    | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION*****Specification***

1. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

**Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
  - (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
  - (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
  - (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
  - (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
  - (f) BACKGROUND OF THE INVENTION.
    - (1) Field of the Invention.
    - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
  - (g) BRIEF SUMMARY OF THE INVENTION.
  - (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
  - (i) DETAILED DESCRIPTION OF THE INVENTION.
  - (j) CLAIM OR CLAIMS (commencing on a separate sheet).
  - (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
  - (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).
2. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.
3. Applicant is reminded of the proper content of an abstract of the disclosure.

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A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

***Claim Objections***

5. Claims 6-10, 16-27 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim can not depend on any other multiple dependent claims. See MPEP § 608.01(n). Accordingly, the claims 6-10, 16-27 not been further treated on the merits.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-2, 9, 11-12, 19, and 22-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Reshef (U.S. Pat. 6,529,559).

Regarding claim 1, Reshef discloses a method of decoding a communications signal in a digital communications system, where the communications signal is modulated according to a modulation scheme (see col. 5, line 51 to col. 6, line 6, i.e. an M-ary modulation scheme) including amplitude information as shown in Figures 2, 3; the method comprising generating (a soft output computation module 40) a likelihood value for a received communications signal  $y(k)$ ; decoding (an output decoder 64) the

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communications signal based on at least the generated likelihood value; characterized in that the method further comprises providing (a channel estimator 58) a reliability indication of the amplitude information conveyed by the received communications signal (col. 9, lines 10-54); and that the step of generating the likelihood value further comprises generating (60) the likelihood value on the basis of the provided reliability indication of the amplitude information (from the channel estimator 50).

Regarding claim 2, Reshef further discloses method comprising receiving the communications signal by a receiver module (Rx front end 52), and that the reliability indication is provided by the receiver module.

Regarding claim 9, Reshef discloses a that the communication signal is modulated according to a Quadrature Amplitude Modulation scheme (QAM, see col. 12, lines 35-45).

Claims 11-12, 19 are similar to claims 1-2, 9. Therefore, claims 11-12, 19 are rejected under a similar rationale.

Claims 22-30 are similar to claim 1, and furthermore, Reshef also discloses a device being a mobile terminal (col. 8, line 64 to col. 9, line 3). Therefore, claims 22-30 are rejected under a similar rationale.

***Allowable Subject Matter***

8. Claims 3-8, 10, 13-18, 20-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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9. The following is a statement of reasons for the indication of allowable subject matter: Reshef fails to disclose step of receiving the communications signal further comprises scaling the communications signal by an amplifier; and the step of providing the reliability indication comprises generating the reliability indication on the basis of a gain setting of the amplifier; the step of generating the likelihood value on the basis of the provided reliability indication comprises determining (702) whether an amplitude change by a predetermined magnitude has occurred within a predetermined time period; the step of generating the likelihood value on the basis of the provided reliability indication of the amplitude information further comprises adjusting (704) the likelihood value to a value corresponding to higher uncertainty of a predetermined bit value if an amplitude change has occurred and if said bitvalue is encoded using amplitude information.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ohnishi et al (U.S. Pat. 5,566,191) disclose a soft decision maximum likelihood decoding method with adaptive metric.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHAI TRAN whose telephone number is (571) 272-3019. The examiner can normally be reached on 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on (571) 272-3024. The fax

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phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KHAI TRAN/  
Primary Examiner, Art Unit 2611

*September 17, 2008*